CREATIVEWORDS

ARTICLES AND FEATURES

1. Financial, technology, technical

2. Features for staff newsletters

3. Interviews, profiles, reviews

CREATIVEWORDS

Client: Patsystems electronic trading

Project: Article describing a new front end for traders

Power to the professionals

Traders now have a new front-end that sets the highest standards for speed, flexibility and overall performance

The old order is fading away. As open outcry floors are replaced by computer screens in one market after another, new technology has become the ticket to ride for anyone with the right software and the determination to succeed in the online world.

But not all traders have the same needs and aspirations. Some work on their own accounts, whether full-time or as moonlighters, focusing on so-called retail sector where trading is lower margin and less demanding. At the other end of the scale are seasoned professionals, the traders in investment banks and proprietary trading houses whose business is high volume, high value, cross market, complex, intensive. It is for this sector, the institutional marketplace where speed and versatility are vital, that Patsystems has created Pro-Mark.

Bridging two platforms

Pro-Mark is a premium front-end for committed professionals, an industrial-strength solution that maximises the benefits of Patsystems' new TradeMark platform. Like TradeMark itself, the new front-end is the result of close cooperation with potential users in investment banks, hedge funds and trading houses. The common denominator is the need for an application for highly active traders who use intricate strategies across a variety of products and exchanges.

Although designed to complement TradeMark, Pro-Mark will also work on Patsystems' current platform, which means it is available immediately rather than when the migration to TradeMark is complete.

Speed and agility

If you are serious about trading, you need swift pricing and the confidence that you can enter and exit positions rapidly. Any drag on the system could mean the difference between profit and loss, which is why Pro-Mark makes a virtue of speed at all levels. For example, speed of navigation and order entry, and speed of cancellation, amendment, fill receipt, throughput and handling.

Market intelligence

You also need detailed information to stay aware of market conditions and to make the right decisions. With Pro-Mark, you trade intelligently as well as swiftly because you have a wealth of information on your screen.

User friendly

Patsystems has taken J-Trader's strengths and refined them for Pro-Mark, creating the perfect fit for the professional market. Those familiar with J-Trader will notice the revamped graphical user interface, the simple-to-follow icons, and the ability to customise features according to very simple needs.

Adding value

As you would expect, Pro-Mark supports a wide range of exchange order types and spreading tools, and you can trade futures, options, forex and other asset classes from the same screen.

So, what lifts Pro-Mark above its competitors in the professional marketplace?

First, the improvements that Patsystems has made to all the 'buttons, dials and switches' that are familiar to other premium front-ends. Pro-Mark has all the standard features and benefits of a high-end system, only better. Second, and most importantly, Pro-Mark includes a range of unique tools – innovations such as a multi-leg spreading tool called Prism, and a depth-of-market trading tool called Reflector.

Whatever your background, if you are a committed professional looking for the next best thing, Pro-Mark may well be the answer. For more information and a demonstration, contact your nearest Patsytems office.

CREATIVEWORDS

Client: Content marketing agency

Project: Ghost-written thought leadership article

What will VAT mean for companies in the UAE?

Is it boom time for VAT specialists in the UAE? Following the announcement last year that the UAE will introduce VAT in January 2018, businesses in the Emirates must prepare for a huge shift in the economic and financial landscape.

In most cases it will not be cost-effective for smaller businesses to rely on giant firms, so there is a very real opportunity for independent consultants and start-ups to step in and help with the journey to VAT compliance.

Advisors with direct VAT knowledge will be needed to help prepare businesses in the run-up, while advisors with compliance and supervisory qualifications will be required once tax is being collected from next year. This opens the door for consultants with the right backgrounds and blend of skills, and it will certainly create many new positions across the Gulf for tax and accountancy specialists.

The framework for VAT

VAT (Value Added Tax) is a consumption levy imposed on goods and services, and is near universal across the world. The decision to introduce it to the Gulf states has been prompted by the need to diversify the regional economy and boost revenue generation, and in particular to reduce dependence on oil revenues. The change has far-reaching implications both for businesses in the region and for the service companies and professionals who advise them on accountancy and financial matters.

So, what will VAT mean for the business community? It's a complex topic and the fine details are still being worked out as the countdown to January 2018 begins, but the framework is reasonably clear. The tax will apply to almost all goods and services except basic food items, education and healthcare, and it will be set at 5%. Every business function will be affected, from IT and human resources through to procurement, finance, and marketing. This is because VAT is a requirement at every stage in the supply chain.

Although large corporations, SMEs and small family businesses all have potential liabilities, only companies with revenue over a specific amount will have to register for VAT by law. The Ministry of Finance has confirmed that businesses with an annual revenue of more than AED 375,000 will be required to register for VAT, while those with a revenue of between AED 187,500 and AED 375,000 can choose whether they wish to register during the initial roll outor postpone it until later. Businesses will be able to register for VAT with the Ministry of Finance from October 2017, by which time all the requirements will be known.

Free zones and VAT

The VAT position in the free zones begs a few questions and needs some clarifications before the ground rules are fixed. For example, assessors must consider how to class goods and services that are obtained inside a free zone but which have originated outside the zone, be it from the same region or from overseas. And they must also consider how to treat suppliers between different free zones, as well as be aware of any tax nuances and variations between the six member states of the Gulf Cooperation Council (GCC), who will apply VAT in accordance with specific local rules and regulations.

VAT planning and advice

With less than 10 months to go before VAT is introduced, comprehensive planning, preparation and checking is essential to ensure a smooth transition. Businesses must educate their staff, customers and vendors, and reconfigure all their systems. This is no small undertaking in a region that is used to subsidies and has no

experience of taxation. It is a cultural change as much as an economic one, and requires detailed impact assessment and change management. If VAT is not applied correctly, businesses will find themselves in an administrative and financial mess, and failure to comply with the new tax laws will also incur penalties.

Research has shown that many companies have been slow to respond. According to an EY survey in 2016, more than 50% of companies in the GCC had made no preparations. Further afield, the example of Malaysia, which introduced a goods and services tax in 2015, but without adequate preparation on the part of many businesses, underlines the importance of timely planning, and companies that delay their preparations may well be compromised when the tax becomes law.

Key steps for compliance

During 2017, businesses must assess the capability of their existing systems, flag contracts that need VAT action, identify inter-company transactions, and provide appropriate training for staff. All goods sold and all services offered must be VAT rated, and all taxable items from suppliers will need to be properly recorded and charged. Scrupulous cash accounting andrecord-keeping are crucial at all levels throughout the business in order to satisfy the tax authorities and ensure that tax returns are filed when due, which is likely to be every three months.

This means tighter controls and professional oversight at every stage in the business cycle. Invoices and records, filing systems, collection and payment procedures, remittance of VAT returns: all need to be brought into line and rigorously checked so that VAT can be collected smoothly and efficiently, and with clear audit trails. This can be particularly demanding for smaller businesses with fewer resources, but every enterprise now faces the same challenge to navigate the steps to become VAT ready and then meet a new and ongoing tax obligation.
And even businesses that currently fall outside the VAT threshold must still review their positions.

Boom time for VAT specialists

It is a challenge that is bringing accountants and other financial advisers to the fore, as they have an important role to play in helping the local community to adjust to the new tax regime. Lack of familiarity with VAT is a significant obstacle, particularly for businesses that have relatively basic accounting systems, and some small businesses may not even keep formal records. Expert advice and guidance is needed so that businesses can map their activities and understand their VAT liabilities across the supply chain. Businesses in the
Emirates would be well advised to seek professional help as soon as possible.

Opportunities for entrepreneurs

Business-to-business opportunities in the UAE will grow as the year progresses and the urgency to be ready for the VAT D-Day increases. Many vacancies are being posted for tax and accountancy professionals who can advise companies or work with the government, and there is a gap in the market for VAT-savvy entrepreneurs with the right skillsets to steer companies through the many changes required between now and January 1, 2018. VAT managers, auditors, IT experts, accountants, and analysts of all descriptions are in demand to oversee the transformation.

While the big accountancy firms will reinforce their existing teams and enhance their tax advisory services, some businesses will increase in-house capabilities by hiring their own teams. But there is an opportunity for independent consultants and start-ups to help smaller companies become compliant.

Time is running out, and businesses in the UAE must prepare with haste if they want to be ready for 2018. For many, taxes are now a certainty, and even if your business currently falls below the VAT threshold, you must still be tax-aware and financially focused.

CREATIVEWORDS

Client: Fintech magazine

Project: Interview feature

Fintech in the fast lane

New technologies and regulations are setting a furious pace for financial services. With change sweeping across Europe, the Swedish bank Nordea has been quick to respond

There's a signature line in the film Top Gun that could equally well describe Ewan MacLeod's approach to business: 'I feel the need – the need for speed.' As chief digital officer of Nordea, the largest bank in the Nordic region, MacLeod is a passionate advocate of the digital economy and the transformative power of today's technology. Whether he's discussing instant payments in restaurants (to eliminate the frustrating wait to settle bills) or technology for on-demand banking, MacLeod has clear views on how to create faster and more efficient services.

'Consumer power is the number one driving force today,' he says. 'Consumers expect a high level of digital communication and immediate service. Only a few years ago, before the on-demand age, people had no option but to wait for a service. Now, service providers must use technology to respond instantly to the needs of their clients.'

Change is coming from many directions, not least the regulatory front, and it's 'causing a bit of wheel spin', says MacLeod. Businesses have to adjust to new rules of engagement and a different landscape. For one, PSD2 and open banking is reshaping the marketplace, and many organisations are understandably worried about losing position and are unsure how to react.

But not Nordea. 'We're super focused on open banking and new business models,' says MacLeod. 'If you look at Facebook, Google or Amazon, they are all consumer experiences that we're now very familiar with and can learn from. The challenge for the financial world is to adapt to new consumer offerings that are competing with traditional models, and to do so in a more demanding regulatory environment.'

A good example of how Nordea is adapting – and moreover taking a lead – is the development of the bank's open portal. The first version of the portal, which is targeted at external developers, was launched earlier this year. It will be fully developed by 2018 and provide a channel for partners and third parties to develop new products and services. Not only does it meet the requirements of PSD2, it puts Nordea in pole position for APIs in the Nordic market.

'The portal reflects our vision of the future,' says MacLeod, 'and shows how we are collaborating with fintechs. It will provide our customers with a better service while allowing them to stay in control of their own data.'

MacLeod firmly believes that customers should have more control of their data, provided that banks can still access data to improve services within the boundaries imposed by new regulations.

'We mustn't become mere consoles,' he warns, 'with customers pressing a button to either share or withhold information. The important thing is to maintain trust. From Nordea's standpoint, we are a trust partner, and we have a trusted role to play in managing our customers' data. The reality for financial institutions is that they can't always step out of the equation, as they have a duty to educate where necessary, and to use data to identify ways to provide a better service.'

Because banks have a long history of managing data, and trust is a cornerstone of the industry, MacLeod sees many opportunities to develop new data-driven services that would be welcomed by customers. The future, he says, doesn't belong exclusively to technologically sophisticated search engine providers or social media companies, which is why Nordea is constantly looking at ways to harness and manage data for the benefit of customers.

Cybersecurity is one aspect of data management that must never be forgotten. 'There's nothing more important to us than our data,' says MacLeod, 'so we must protect it at all times. We do that by employing the brightest minds in the marketplace and forging strong relationships with security bodies worldwide. Cybercrime is the downside of our increasingly digital world, and it's the common enemy in our industry.'

More positively, MacLeod is enthusiastic about the creative possibilities offered by data. 'We should make more use of big data, artificial intelligence, machine learning, and all the other exciting stuff that's happening now,' he says. 'Intelligent use of data makes life easier, speeds up and extends services, helping us in countless ways.'

To take a personal example, MacLeod mentions automatic systems for budgeting and other tasks. 'I've recently moved from the UK to Denmark,' he says, 'and I don't know how Nordic systems work. I'm unfamiliar with the processes, how taxes work, how much things cost. That means I'm using loads of different spreadsheets, but what I really want is an integrated, seamless solution that automatically handles all my requirements. We should be creating smart solutions like this, bringing data together to solve day-to-day problems.'

Data insights can create many new dimensions for financial services. 'I'm not suggesting that Nordea should get into Amazon's space, says MacLeod, but we can certainly enlarge and refine our role. For instance, we can use artificial intelligence to enhance our primary role as banks and financial experts.

We're testing many ideas, and we've already deployed a pension service that uses artificial intelligence. This is a fast-moving space for all banks, and you can expect to see many more developments in the near future.' MacLeod is strongly in favour of partnerships to promote development. 'It's our job to bring the best possible service to the customer,' he says. 'But that doesn't necessarily mean we have to do it alone. If we have a service idea, it's good to work with partners who can help us experiment with data and then create something that's right for customers and complies with regulations.'

MacLeod highlights Nordea's work with accelerators. 'We've had the Nordea Startup Accelerator programme for a couple of years now, and it's been a fantastic way to interact with startups and create something new.' Here again, MacLeod emphasises the need for speed. 'Don't take six months to sign a contract,' he says, 'or six months to get the company into the procurement process. We're normally geared to work with bigger organisations, where the wheels move more slowly, so we've had to change our approach completely.'

It's a learning process where innovation and speed must follow the rules. 'I'll give you an example,' says MacLeod. 'We had one company with a great idea, a phenomenal idea. But when the business sponsor heard the pitch, the response was: "Well done, great product, looks fantastic, it's illegal." So we had to go away and adapt the idea, and the feedback gave us the insight to do that. The sponsor loved the revised version and we're now working with this company. The trick is to use agile software development, working fast and with team focus; but never rush, never create a waterfall. Collaboration and controlled speed, that's the aim.'

Nordea is creating a clear framework for this collaborative approach. 'We have some announcements coming up,' says MacLeod, 'that will ensure we work correctly and productively with startups and all

third parties. Our partnership model is as open as possible, which is a reminder to everyone in Nordea that we don't have a monopoly on ideas. Open banking also means being open to ideas. There's a Copenhagen Fintech Hub, a Stockholm Fintech Hub, a Fintech Factory in Oslo and so on. We're interested in all fintech initiatives, and we're constantly on the lookout for potential partners.'

Nordea is a bank on the move – quite literally in the case of its HQ, which made headlines recently when it was announced that it would relocate from Sweden to Finland. It's a bold step that will enable the bank to operate in a freer regulatory regime, and it typifies Nordea's forward-looking and progressive culture.

'We take a smart approach to everything we do,' says MacLeod. 'We don't believe in having meetings just for the sake of meetings, and we're committed to creating an environment where we get things done without unnecessary obstacles.'

It was this philosophy that led Nordea to abandon the traditional office setup. Since 2013, instead of having designated desks and personal spaces, people can sit where they want and so interact more easily and creatively. You could say it's a neat physical demonstration of open banking and one that chimes perfectly with Nordea's commitment to collaboration and constructive change.

CREATIVEWORDS

Client: News agency

Project: Article to promote a Citigroup initiative

Shaping the future of banking

No industry has been left untouched by the internet revolution. Over the last two decades, traditional business models have been transformed by online and mobile communication, big data, cloud computing, artificial intelligence and the internet of things. Moreover, as new marketplaces and products have emerged, underwritten by digital technology and innovative start-ups, there has been a radical shift in consumer expectations.

So, what does this mean for banks? While retail has led the way in the new economy, with Amazon, Apple and other digital pioneers reinventing the model for supply and demand, banks are well aware that they must evolve to stay relevant. And if they fail to adapt, they will be overtaken by versatile fintechs who can steal market share because they are better able to meet customer needs.

Today, those needs are typified by millennials – digital natives who are never without smartphones, always connected, and who expect omnichannel access and services that are personalised and on demand. Gone are the days when customers were satisfied with nothing more sophisticated than an occasional visit to a local branch and regular withdrawals from high street cashpoints.

As technology has evolved, so has consumer power. Banks must therefore ensure that their products and services are developed collaboratively and reflect the needs of a more discriminating and demanding customer base. This is where forward-looking banks such as Citi are stepping in and building the future of financial services. By working closely with its customers as well as with fintechs, Citi is accelerating the move to open banking and creating platform-based technologies that offer greater connectivity and more personalised services.

Citi is no stranger to innovation. During its 200-year history, the bank has been a conspicuous innovator. From establishing the first foreign exchange network, to financing the Panama canal and rolling out ATMs, it has been in the forefront of change. And with over 200 million customers in 160 countries and jurisdictions, it is committed to developing banking that is flexible, inclusive, and transcends business lines and geographies.

Citi's global reach and resources are clear advantage when it comes to innovating today. But the bank is conscious that it doesn't have all the best solutions internally, so in recent years it has been keen to generate ideas through creative partnerships. One example is the launch of the Citi Developer Hub in 2016, the first open banking platform launched by a global bank.

More significantly, thanks to an initiative called Canvas, Citi is widening the field and turning to its customers for ideas and inspiration. While there is nothing new in being customer-centric, Citi takes the principle to a whole new level with Canvas.

A beta-testing community as well as a testing platform, Canvas enables customers to contribute ideas and shape the development of banking applications that will integrate functionality and improve the way customers manage their personal finances.

Canvas was launched in December 2017 and began testing at the start of 2018. It is among the first initiatives of its kind to be offered by a bank, and it gives Citi an exciting new dimension for customer co-creation and open banking programmes. Customers gain a comprehensive view of their finances and data across various banking accounts. In partnership with Citi, they can explore, refine and test ideas that are custom-made for their lifestyle and needs. This is a telling move because few other large banks allow customers to import data from their other

accounts. It is also notable because, according to the 2018 World FinTech Report, most retail banking customers feel that their banks should listen more carefully to their views and respond better to individual needs.

Initial testing through Canvas has focused on helping customers to identify and classify their spending in relation to their income, and providing insights and advice to budget wisely and achieve financial goals. Early projects include a line of credit that will provide freelance workers with faster access to working capital, and a tool that monitors spending habits.

Based on feedback from the community, ideas generated through Canvas may be further tested and refined, placed into production for live roll out, or dropped because they are impractical. New tests are released regularly, and the most appropriate members from the Canvas community are invited to participate in testing. If picked, members can use, challenge, and shape the pilot developments. Customers can opt in or out of the community at any time.

Personal financial management is no longer a nice-to-have banking feature; it is a must for all banks if they want to strengthen their customer relationships and add value to their business propositions. Fintechs are collating data from a wide range of sources and connecting and unifying financial information in ways that today's customers demand. Banks must be part of this movement while building collaborative communities that give customers an active role in shaping digital banking.

As a global bank with deep roots and a successful history of innovation, Citi is well placed to work collaboratively and experimentally with communities across all regions and countries. And because security is fundamental to banking and finance, Citi inspires confidence and trust wherever it operates.

While fast-moving fintechs provide the technological know-how, and customers furnish the enthusiasm and momentum for change, banks ensure a safe environment for progress. Citi's Canvas community and platform combines all the right elements in a creative alliance that can grow swiftly and securely worldwide.

If you feel that your bank is not providing enough opportunity to influence its products and services, Canvas is a chance to make your voice heard. The Canvas community is open to all Citi customers who want to shape the future of digital banking. To apply for membership, see canvas.citi.com.

CREATIVEWORDS

Client: International real estate advisor

Project: Thought leadership article

Brexit and beyond

Harold Wilson famously said that a week is a long time in politics. He wasn't wrong. The Brexit vote and the recent snap election demonstrate how quickly and dramatically things can change. Then, of course, there's the Donald Trump effect. Given recent events in Europe and globally, how is the London property market faring, and is the new order bringing opportunity as well as uncertainty?

Brexit was expected to rattle the commercial market – and so it proved during the first quarter after the referendum, with London sinking to its lowest level in four years. Nervous investors held back, preferring to wait and see, and transaction volumes suffered a steep decline.

A year on, despite the surprise general election and the return of a severely weakened Conservative government, it's a different story. Share prices have recovered, transaction volumes are up, big deals are making headlines.

If 2016 closed badly, London investment volumes in Q1 2017 were the highest for any first quarter on record, and leasing volumes have remained buoyant. Appetite for real estate as an asset class has grown significantly across all investor sectors and in particular family offices.

Something lost, something gained

The reason for the resurgence is not hard to find. The fall in sterling, as a result of Brexit, has made the UK an attractive proposition for overseas investors, especially those from Hong Kong, China and the Middle East. Investment is diversifying as a wider range of international buyers hunt for opportunities in London, minimising the importance of the EU as a source of capital.

More than 80% of investment in central London in the first half of 2017 came from overseas investors, and Chinese investment in London commercial property has more than trembled since before the referendum. Among the most notable deals were the purchase of the Cheesegrater (122 Leadenhall Street) in March and the Walkie Talkie (20 Fenchurch Street) in July – the latter a UK property investment record at £1.3bn.

Highs and lows

However, trophy buildings don't tell the full story. While high-rise London continues to soar, what's been happening lower down? The big-ticket Grade A deals provide a slightly distorted view, and the submarket is less bullish and less liquid. Here, there is more evidence of investor nerves – or, at least, caution. Although there's no shortage of capital in the overall marketplace, investors are more reluctant to commit at lower levels. Investment turnover in Midtown in the last quarter was down 74% compared with the previous quarter. The decline is more to do with lack of available stock and smaller lot sizes, but investor sentiment still played a part.

Nonetheless the general trend for Central London is positive, with transaction volumes rising by 18.5% in H1 2017 compared with H1 2016. Being a smaller market, Midtown is more prone to investment spikes but its Central London position provides long-term strength and continued prime yields.

Looking ahead, the speculative market is booming. For Q3 2017, Farebrother predicts the highest quarterly figure of speculative space to complete since the firm began its Midtown records. In contrast to Midtown, the South Bank experienced its most successful investment quarter since Q1 2014, with overseas money sustaining the market. Moreover, in a London marketplace usually dominated by one or two large transactions (the trophy deals that tip the scales) there was a significant spread in lot size.

Capital commitment

Fears of a damaging 'Brexodus' – companies leaving London following the Brexit vote – are largely unfounded. While there was initial talk that the largest global banks would move thousands of jobs to the continent, a more measured response has prevailed. Although transfers will continue, many financial institutions have confirmed their commitment to London – among them Deutsche Bank, which has just signed a lease for a new London headquarters.

Moreover, London is not reliant on financial services to fill space. The technology and creative industries have overtaken finance as a driving force in the capital, effectively counteracting any bank departures. In a post-Brexit vote of confidence, Facebook, Apple and Amazon all have their eyes set firmly on London. This was underlined in August by the announcement that OneWeb, the satellite telecoms giant backed by Virgin Group, has agreed to open a London base.

Demand up but rents down

Demand for office space remains strong, and not just in the technology and creative sectors. The serviced and coworking sector is continuing to expand, fuelled by the growing need for cost-efficient and flexible space. The sector accounted for the largest share of space leased in Central London this year, pipping technology, media and financial services.

The London office market achieved nearly £9 billion of transactions in the first six months of 2017, emphasising that while Brexit and other political changes may have heightened occupational risk, the UK remains comparatively secure in the global marketplace. There is good supply in Midtown, with vacancy rates currently 4.9%, while promising developments with new hubs are emerging at Farringdon and New Oxford Street. If there is a cautionary note, it's the drop in rents and an increase in tenant incentives; however, this is not significant and, barring a sudden change of events, unlikely to knock investment confidence.

London still calling

London is nothing if not resilient, having stood firm as a financial and economic hub through centuries of political and economic change. For investors, regardless of how Brexit will play out, Central London offers long-term stability and a business reputation that inspires confidence. And because the capital is not dependent on the EU, global real estate investors will continue to favour it for property opportunities.

CREATIVEWORDS

Client: International payments provider

Project: Ghost-written thought leadership article

What next for digital wallets?

The crown is slipping and cash is losing its kingdom. Although a recent Forrester poll revealed that 53 percent of people still favour cash, the future is unquestionably digital and paperless. The cashless society is coming and smartphones are providing the processing power and connectivity for contactless payments and digital wallets.

Millennial momentum

The transformation is driven by the buying habits and preferences of the millennial generation, who are digital natives and the most committed and sophisticated users of smartphones. However, while millennials and mobile technology go hand in hand, and smartphones are now the principal method of internet access worldwide, digital wallets are not yet mainstream.

The rise of wallets

The concept of the digital wallet has been around since the early days of online commerce, and can be defined as any payment made through a device at physical point-of-sale or through mobile e-commerce. The distinction is between 'proximity' wallets and 'remote' wallets. The former means direct interaction between buyers and sellers while the latter is when buyers and sellers are not in the same place.

A further distinction can be made between mobile web-browser payments and in-app payments. Near field technology (NFC) is the main power behind proximity wallets, allowing smartphones to make a wide variety of transactions and to store identity information.

Anything that was previously transacted by paper or card can be kept on smartphones, and with 2.6 billion smartphones in use worldwide, today's mobile phones are versatile user interfaces and engines for e-commerce. The likes of Apple, Android and Samsung, each with their own 'Pay' solution, are prime examples of the way the online market is moving.

Simplify and conquer

There are compelling reasons why digital wallets are destined for a bigger role in payments. Above all, simplicity. As Henry David Thoreau famously remarked: 'Our life is frittered away by detail... simplify, simplify' – a sentiment that could well be the business case for smartphones as the payment method of choice.

When all the digital information needed for transactions is stored in one place, buyers and sellers have the prospect of frictionless one-click purchasing. Gone is the need for consumers to enter a wealth of tedious details, while retailers benefit because fast, contactless transactions encourage greater volumes of business. The result is a seamless checkout experience. In addition to convenience, transaction costs are reduced through straight-through processing, because tapping or scanning a mobile device removes the need for intermediaries.

Convenience versus security

So much for simplicity – what about security? Whenever digital technology moves into new areas, there is always the fear that innovation will outpace security. Cybercriminals are of course quick to exploit any weaknesses, so consumers are understandably wary of trusting new payment methods.

The simple truth is that there is no such thing as 100 percent security; just as someone can pick your wallet, they can also steal data from digital wallets. However, wallets that contain credit card numbers

loaded via an app are safer than chip-enabled cards. This is because the numbers are protected by tokenization, and they can't be written down or pilfered by a skimmer.

While card data is vulnerable to thieves with small NFC readers, smartphones are more secure; but that's not to say they can't be hacked, as has been the case with the NFC feature on some Android phones. This happens when a malware-infected app is downloaded and uses the phone's NFC reader to harvest credit card details and send them to the attacker.

When digital wallets incorporate multiple levels of authentication, they are among the most secure payment methods available today. With all technology, no matter how complex, the basic principle of effective security is the same: something you know, something you have, something you are. In other words, a password-token-biometric combination.

When this three-step approach is developed rigorously and consistently, and in parallel with digital wallet solutions, particularly for smartphones, it provides a highly secure environment for payments and should be enough to allay security fears.

Integration and compatibility

Convenience and simplicity are more likely to be compromised by market fragmentation and poor levels of interoperability rather than by security. Digital wallets can only function with compatible systems, which means widespread adoption and acceptance depends on successful integration across different processors and merchant and customer hardware.

The marketplace today is highly fragmented, with numerous providers pushing proprietary offerings, and there is no single infrastructure or wallet environment that ensures systems can talk to each other. What consumers need is a unified mobile commerce experience.

Making it happen with Paysafe

The Paysafe Group is helping to build a global wallet community and create the simplicity, security and compatibility that are the foundations for greater confidence and participation in mobile payments. The growth of Paysafe's wallet business is reflected in figures reported for 2016. The digital wallet division contributed revenue of $311 million, representing 31 percent of the group's total for the year, up five percent from the previous year. And digital wallet volume rose 15 percent to $22.9 billion. Merchants who accept payments through Paysafe's digital accounts can access millions of consumers through a single interface, and there are more than 100 local payment options, multi-language customer support, and full chargeback protection.

Paysafe is building the marketplace through continuous innovation and expansion. Consumer-facing apps, essential for smartphone usage, are a key focus. Recent developments include functionality such as multiple upload options and new versions of the group's Skrill and NETELLER apps. Another focus is the integration of wallet solutions into merchants' mobile checkouts, and the integration of third-party technology to improve interactions and customer experience. Paysafe also provides software developer kits that enable quick and efficient integration through secure, ready-madecode that can be used as is or adapted to individual requirements.

Finally, as further evidence of the demise of traditional payment methods, there is the paysafecard brand. The card brings another dimension to wallets by allowing consumers to convert cash into digital currency to pay for goods and services online, without having to provide any bank or credit card details to the merchant. Consumers can buy online and then bring the bar code on their smartphone to a POS to pay for their e-commerce purchases.

The way forward for wallets

With the growth of e-commerce and the ubiquity of mobile devices, digital wallets have an assured future. But greater integration and better awareness and education are needed before consumers and merchants fully understand the potential and feel comfortable about security.

Paysafe's digital wallets are showing the way forward, and provide additional functionality beyond wallet-to-wallet payments. This includes easy-to-use options such as frictionless recurring payments, VIP and loyalty programmes, linked virtual and plastic payment cards, and mobile-optimised solutions. Consumers can also send money to other wallet users worldwide using just an email address.

As digital enablers such as Paysafe continue to push boundaries and create app-based solutions and compatible systems, the mobile marketplace will mature and smartphones will increasingly become trusted financial tools.

CREATIVEWORDS

Client: Global engineering and environmental consultancy

Project: Article for the company's client magazine

Vivian revived

Long abandoned, Vivian Quarry once produced thousands of tons of slate each year. This relic of Britain's mining past now has a new role as an historic monument

The massive grey walls rise 150 metres through six terraces cut sharply into a tree-fringed hillside. Untouched since 1964, when slate production ceased at Vivian Quarry, the once heavily excavated face is a stark reminder of a lost prosperity.

Lost maybe, but not forgotten. Today, this vanished age of local industry can be relived by anyone who visits Padarn County Park, where the restored quarry has been granted a second life as an historic monument. Situated in Llanberis, Vivian Quarry was part of the Dinoric Quarry Company, which opened in 1809 and during its peak produced nearly a million tons of slate a year. Sadly, by the 1960s production had slumped and, like many other Welsh mining operations whose profits have dwindled since the war, Dinorwic closed.

Though open to the public since the early 1970s, the quarry has deteriorated greatly in recent years. The challenge of restoring it as an historic monument has been undertaken by Gwynedd County Council and Cadw (the Welsh Historic Monument Agency), with funding from the Welsh Development Agency and supervision services from Acer Wallace Evans.

In 1990, having completed a feasibility study for the project, Acer Wallace Evans began the first stage of the restoration. This involved repairs to the winding houses at the lower two of the six terraces and to the slate-trimming sheds or 'walias'. Monitoring repairs were also made to the slate walls.

At one point a sealed adit from the first terrace to the quarry was opened up and discovered to be the roost for Lesser Horseshoe bats, a species that often inhabits disused mines. The engineering design was therefore modified to preserve this important habitat.

The next stage, begun in May 1992, was particularly demanding as it involved stabilisation of the first terrace retaining wall, which had been found to be moving. The wall is some 15-metres high, varying in thickness from 1.5 metres at the base to 4 metres at the top, and is constructed in dry-laid slate. It rises in steps and is topped by a 3-metre parapet wall, which adjoins the walias. The terrace is then level 20 metres before it meets the wall rising to the next terrace.

Movement resulted from the wall being constructed on loose material composed of broken slate and discarded rock, along with the original topsoil and other general surface debris. This mixture of waste material forms the infill between the wall and the rock face. The presence of clay, which contracts and expands in response to dry and wet weather, has imposed further stress.

Seventy rock anchors were drilled through the wall and into the rock face, to provide a secure harness. Their length varied between 7.5 metres and 24 metres, with diameters ranging from 15 mm to 26 mm. The stepped wall was then restrained against vertical RHS soldiers and the parapet wall, using a bullhead railway section in cruciform pattern, anchored to the terrace surface.

Throughout this technically difficult operation, public access was maintained along a road at the foot of the wall, and on the terrace above. Scaffolding was designed to allow vehicles to pass, and access was restricted only

during installation.

Great care has also been taken to avoid damage to the stonework, while the design of the restraint steelwork employs materials that complement the surroundings. Working closely with the local contractor, Rock Engineering of Tremadog, the team put in long hours during the summer months and completed the project on time and within budget.

The site can be explored by 'Vivian Trail' paths, which lead into and around the quarry, while many of the original structures have been refurbished to provide facilities for visitors, such as a museum, café and narrow-gauge railway. After nearly three decades of deterioration, Vivian Quarry is enjoying a new lease of life. Although it will never again fulfil its original role, the quarry has been successfully preserved for the benefit of future generations, providing a striking record of a local industry that thrived for more than 150 years.

CREATIVEWORDS

Client: Insurtech specialist

Project: Article for the company's client magazine

Safe as houses

How can technology help household insurers manage risks and improve customer service? RDT has the answer

The UK household insurance market is massive, with the Association of British Insurers reporting an underwriting profit of £930m in its *Key Facts* statement for 2014. However, being big it is not necessarily the same as being buoyant, and household insurers now face threats that could push them down the same unprofitable road as the motor market.

Recent years of headline-grabbing floods and huge pay outs, combined with rising administration charges, have placed the household market under growing pressure and underlined the need for better industry practices and more reliable data. Increasingly, that means better technology. Technology that can gather and process data more efficiently, identify and isolate risks, and improve claims handling.

Postcodes and premiums

Household cover is more complex and layered than motor cover, and offers fertile ground for innovation and disruptive solutions that will improve customers' experience and provide insurers with more granular and meaningful information.

Take location data as an example. Two houses in the same postcode might have very different elevations, with one on safe ground while the other is in a flood-risk zone. So how do you make distinctions and move away from the common denominator approach that unfairly lumps everyone together?

The devil is in the detail. You need comprehensive information at street level, about individual houses, local geography and conditions, and many other contingent factors that are necessary to price accurately and fairly. Such is the domain of big data, where the more an insurer knows, and the more information it can swiftly and usefully process, the better it can manage risks and serve the insured.

Property facts and figures

This is where RDT's core products – Landscape, Equator and Skyline – provide a strong foundation for the household market, helping insurers and their customers at all stages of the insurance cycle. An example is Landscape's integration with Mapflow, which allows insurers to make calculations based on information about the exact location of a property.

Swift data capture and carefully scripted journeys is another benefit, with RDT helping insurers provide their customers with fast responses and a smooth journey from first notification of loss through to settlement. This is especially useful in the housing sector, because people with home claims tend to be more emotional and stressed.

The rates revolution

Of particular benefit is RDT's innovative approach to distribution. Through the Equator rating hub, insurers gain full control of all aspects of their rates. Equator accesses enrichment data from companies such as Experian and Lexis Nexis, uses it to expand and validate details already taken from customers, and then returns accurate prices in sub seconds. In the complex household sector, aggregators are not able to elicit enough risk criteria for insurers to rate sensibly. Equator fills this gap, mapping information comprehensively and accurately.

Smart thinking

A growth area for the future is the 'smart home'. Now that the internet of things is linking all kinds of systems and appliances, there is obvious potential for insurers to access this intelligence to support underwriting and claims handling. It is yet another demonstration of how data is becoming more granular and inter-connected, and technology such as Equator can help insurers to gather and centralise rich seams of information. Google, Apple and other pioneering brands are already exploring ways to increase internet-enabled devices in the home, which will impact household insurance in the same way that telematics is changing motor insurance.

RDT has an important role to play as a technology intermediary and partner, forming strategic alliances with other providers to achieve strength in combination. Across both the household sector and the motor sector, RDT's commitment to innovation and disruptive solutions is helping insurers to benefit from the latest developments in big data and digital technology.

Client: Insurtech specialist

Project: Article for the company's client magazine

Ghost in the machine

Although the road is opening up for driverless cars, progress is not without obstacles

Driverless cars have been around for a long time, if only in film fantasies and on the drawing boards of visionary motor manufacturers. Even as far back as the 15th century, Leonardo da Vinci produced sketches of a robot vehicle powered by coiled springs.

Now, more than five hundred years later, imagination is becoming reality. Driverless cars, also known as autonomous or self-driving vehicles, are cruising our roads in growing numbers, albeit prototypes in restricted areas.

The UK is one of the leaders of this transport revolution, and the government is pledging to promote driverless technology and supporting trials in Greenwich, Bristol and Coventry. So, what exactly are driverless cars, and how do they operate? Moreover, apart from making permanent passengers of us all one day, what are the implications of driverless technology?

You could say that the driverless car has been arriving in stages. Motor technology has become extremely sophisticated over the last couple of decades and developments such as satellite navigation, assisted parking and voice commands are now commonplace, while telematics has blended computer and wireless telecomms to create even more automation.

However, there is a huge gulf between intelligent cars and autonomous cars. When machines take over from people, when no one is turning the steering wheel or applying the brakes, you have surrendered control to the car and must trust that it will get you from A to B in one piece.

Driverless cars can do this by sensing and mapping their surroundings through technologies such as GPS, radar, computer vision, and lidar. Lidar is a combination of light and radar, a remote sensing technique that calculates distance by focusing a laser on a target and then analysing the reflected light. With computer vision, software creates a 360-degree view of the moving world by interpreting images captured by onboard cameras.

Having gathered a wealth of journey data, the car employs advanced systems to process the information and plot a controlled course. It can navigate all obstacles, whether stationary or mobile; recognise and respond appropriately to traffic signs and signals; and update maps and other guidance tools if conditions change. In other words, it reads the road like we do – only much better.

Proponents of driverless cars argue that there are far fewer hazards once you eliminate human fallibility. If to err is human and a common factor in road accidents, technology is not prone to the kind of mistakes we often make behind the wheel. Some might say it takes a computer to really foul things up, but experience shows that we are nearly always safer in the hands of proven and trusted technology. Just think of autopilots: when a plane crashes, it's invariably through pilot error and not computer failure.

In addition to safety, many other benefits are expected. For example, more precise and controlled driving would improve traffic flows and reduce congestion; parking problems would be alleviated because 'ghost' cars could drop people off and then pick them up without needing to park; and no one in the car would need to focus on the road. All well and good, but what about the challenges?

The first issue is liability. If people are no longer driving cars, how do we determine responsibility in the event of a crash? While driverless cars may be safer, fender benders are unlikely to be a thing of the past. Nor can driverless cars anticipate the random behaviour of pedestrians. Accidents, we must assume, will always happen.

The legal and insurance framework must evolve to keep pace with the technology for driverless cars. Clearly, since the technology exists today, it's not the state of our art that will hold back the driverless revolution. Instead, the issue is how to negotiate a welter of legal, social and security concerns. For example, although technology can make cars safer, cybercriminals will be quick to find ways to compromise computer systems. The more we rely on technology for our everyday needs, the more vulnerable we are to cyberattacks.

It's fitting that cars are now part of the internet of things. In a world that is increasingly connected and mobile, designed for greater speed and accessibility, the driverless car is almost a metaphor for our age. Fact and science fiction are merging, and although we are not yet gliding above the tarmac on hover boards like Michael J Fox in 'Back to the Future', driverless cars are already here.

CREATIVEWORDS

Client: Hedge fund magazine

Project: Article tracing the history of hedge fund technology

Keeping up with Jones

The history of hedge funds is brief, but hardly short of drama. In only 55 years these volatile funds have courted triumph and disaster, made and lost fortunes, built reputations and destroyed them.

For Alfred Jones, who developed the concept in 1949, they were a very nice little earner, enabling him to fill his coffers in secret for nearly two decades before the market caught wind of his astonishing success. In 1966, Alfred outperformed the best mutual fund by 44 percent, prompting Fortune magazine to dub him: "The Jones nobody can keep up with".

With the beacon lit, hedge funds multiplied rapidly, attracting the patronage of wealthy investors who were keen to follow Jones's example. However, the inherent risk – gambling on high exposure to achieve big rewards – became clear in the 1960s and early 1970s as many funds went to the wall, particularly in the punishing bear markets of 1973-4.

By the mid-1980s, with confidence gone, fewer than 100 funds remained, and it was not until the 1990s that hedge funds began to rise again, albeit with some celebrated casualties, not least Long Term Capital Management and George Soros's Quantum Fund.

Turning the technology corner

Today, hedge funds are enjoying a second life, one that will increasingly depend on technology. After the highs and the lows, the big wins and the headline losses, hedge funds need better management and control, which is where automation comes in. So, what lessons have we learnt since Jones's day, and what are the criteria for success in the alternative investment sector?

The first thing to realise is that modern funds are far more varied and complex than typical long/short equities models of the last century. For a start, futures, options and other financial derivatives did not exist when Jones was starting out. Today's hedge fund is a cloth of many colours that includes, amongst other things, foreign exchange, credit derivatives, swaps, exchange-traded funds and convertible bonds.

This variety and complexity mean it is difficult to achieve complete automation from the front office through to the back office. Technology that can cut through administration, promote speed and accuracy, and mitigate risk is therefore at a premium. Furthermore, there are clear technology benefits for incubator funds, because start-up operations need scalability and flexibility as quickly as possible to cope with volatility and to avoid the cost of hiring more staff.

Since the late 1990s, independent software vendors (ISVs) have been remarkably successful in introducing electronic trading for derivatives and other products, and there is now a vast array of applications to process trades and provide quantitative and qualitative analysis. However, although the value of automation is magnified in the hedge fund industry, technology has yet to take root in the same way that it has for futures and options. And true multi-asset platforms have not been available to any sector. In other words, integration has been poor. Instead, we have seen the development of niche technology and trading silos. Generic platforms that cater for all trading interests and needs are only just beginning to emerge, but in the future ISVs will be competing with one another to provide their hedge fund clients with trading tools that offer them the versatility they require.

Understanding the issues

In the past, investment in hedge fund technology focused on the front office. Now, as markets converge and trade becomes more complex, automation has a bigger role to play throughout the trade cycle. With private and institutional investors returning to hedge funds in growing numbers, the market needs to concentrate on end-to-end technology and understand where, and how, automation can be introduced.

There is no mystery about the key requirements – reducing costs, increasing transparency, mitigating operational risk, and improving straight-through processing and central matching. But in all these areas, although the need for technology is strongly felt, there is often a poor understanding of where to begin and how to apply the latest tools.

Ron Carmichael is one person who is fully aware of the challenge. His consultancy, Arcturus Associates, was specifically created to guide hedge funds on technology and to work with ISVs on automating the alternative investment sector.

“The will may be there,” says Carmichael, “but the way is not clear. Technology decisions are being dodged because of a lack of knowledge. Often, manual processing remains because there are no guidelines for automating, especially when trying to unite front, middle and back- office functions. Industry professionals need better advice: they need to know what ISVs can provide, which tools are best for which needs, and how to tackle integration issues. As an industry, we need to catch up intellectually as well as technologically.”

So, what is the state of automation today? While the overall level is low compared with other financial sectors, hedge fund managers and investors have adopted some of the technology that has been shaping markets since the late 1990s. For instance, hedge fund databases and analysis platforms are well established. Not so long ago, gathering hedge fund data was an art that depended on chance and esoteric skills. Now, however, you can market, identify, analyse and monitor hedge funds electronically. There are more than 10 large hedge fund databases, all readily available for purchase. Once you have access, you can marry the data with a wide variety of software platforms that provide quantitative and qualitative analysis, portfolio construction, asset allocation and so on.

Research analysis is one thing; automating communication throughout the trade cycle is another. Automated feeds are often lacking, and many people still fax paper back and forth and discuss positions over the phone. Without the right technology, and common standards such as FIX (Financial Information eXchange), growing funds inevitably means growing headcount, when really you should be reducing the number of back-office people. But because flexibility is crucial, and many technological solutions are seen as rigid, it is not hard to understand why the hedge fund industry has been slow to embrace electronic trading.

If automation means compromising flexibility, manual processing is considered the better option. In many cases, what we have is a halfway house: imported spreadsheets and other data, but nothing more sophisticated. Again, we need to raise awareness and cultivate greater industry cooperation. Yes, hedge funds are complex beasts that require complex strategies; and yes, technology has its limitations. But as we have seen, independent software vendors are now building platforms with the versatility and scalability that hedge funds need, while the FIX protocol is providing a good foundation for technological progress.

Then, of course, you have the option to develop tailor-made solutions using application program interfaces (APIs). The API market is taking off among ISVs, and new and more powerful developments are appearing every year. This is very appealing for the alternative investment sector: if there is no ready-made solution, why not create something with the help of a third party?

Managing risk

Although hedge funds are on the rise again, the failure rate is high. In the last couple of years alone, hundreds of funds have sunk. One of the main reasons is insufficient risk control. Given the chequered performance of hedge

funds in the last century, investors expect technology to provide some checks and balances: they want transparency, precise risk management and accountability. Hedge fund managers are therefore looking for technology that can 'institutionalise' risk management. Certainly, this demands more technical precision than relying on spreadsheets and similar tools.

Building for the future

In creating a hedge fund system it is vital to think about the future. Will the system cover a wide range of financial products? Exactly what will it enable you to do? What are the limitations? Can the system cope if you diversify your investment strategies? Is there scope for evolution?

The next few years will be an interesting time for hedge funds. We've seen the power of electronic trading in other parts of the financial industry, and we are now seeing the emergence of new trading tools that are better suited to hedge funds.

Flexibility and versatility are crucial. We need technology that spans products and markets, and maximises straight-through processing while reducing risk. The opportunity to automate is here, and like Alfred Jones 55 years ago, the hedge fund winners will be those who see the potential and act quickly.

CREATIVEWORDS

Client: Global banking network

Project: Article for a staff newsletter

Welcome to fortress Culpeper

Thanks to a massive upgrade, a vital cog in the financial system will soon be more secure

Inside or outside, the signs of change are unmistakable. There are exposed wires, deep trenches, vehicles with caterpillar tracks, workmen in high-vis jackets, and desks covered with well-thumbed plans and drawings.

Then there's the mud. Oceans of mud. If you've visited Culpeper Operating Centre recently, you'll have heard profuse apologies about the farmyard feel and industrial-scale mess.

But progress always comes with a price, and in this stronghold of the financial world it's written in footprints on the carpet and grubby palm prints on the walls.

Even so, despite the debris and disruption, it's business as usual and everyone knows that the temporary discomfort will be worth it.

"We're making a major investment for the future," says Auby Curtis, the centre manager, "and we're all mucking in and working well despite the noise and the debris."

The reason for all the digging, hammering and drilling is a $1.5 million project to replace diesel generators, a $500,000 office development, and a $2.5 million security upgrade to external defences. The office development is now almost complete and has resulted in reduced dining and testbed space, as well as refurbishment of some office space.

The most striking development is on the perimeter of the site and can be seen from the road and the high ground surrounding the centre. The external work is the focus of a security upgrade and involves extensive excavations, which have created a Somme-like landscape of waterlogged trenches and heavy soil that clings resolutely to shoes and clothes.

"The work is part of the multi-layer shield, "explains John Greenaway, who is the onsite project coordinator. "It will deter, detect, delay and defend, a strategy that we call the '4D' approach. The security upgrade had already been given the go ahead when the Oklahoma bomb hit the headlines, but that disaster certainly underlined the urgency of our plans and justified the expenditure."

The shield includes an anti-tank ditch, a 2.5-metre-high security fence, a berm hedge that will grow into an impenetrable wall of thorns, and state-of-the-art electronic surveillance equipment used by the US Army.

Even the most determined and resourceful intruder would be challenged to overcome all these obstacles. But should anyone succeed, the chances of gaining access to the building itself are remote. Security here is equally rigorous and will be improved further during the second phase of the project.

"We are building another Fort Knox," says Jean Panek, the principal design engineer and overall project manager. "We don't want any uninvited guests, and the best way to do that is to make our defence systems as elaborate as possible. The Oklahoma bomb showed that the unthinkable sometimes happens. When it comes to the security of our staff and assets, there must be no half measures."

By the end of the year, Culpeper will be transformed into Colditz – albeit with a human face. And, to use Leonard Schrank's phrase, the financial world will be protected by 'fortress America'. Until then, the sound of diesel engines and power tools will fill the long summer days, Jean Panek and John Greenaway will keep a close eye on progress, and visitors will be asked to excuse the mess and mind their step.

CREATIVEWORDS

Client: Global insurance company

Project: Article for a staff newsletter

Two men in a boat

Most people cross the Atlantic by plane, sail or turbine. Not Richard Hoyland. Defying sharks and storms, he relied on muscle power alone

Few challenges stand comparison with an epic maritime adventure – except, perhaps, conquering the north face of the Eiger, reaching the South Pole on foot, or planting a flag on the Moon. And when it comes to rowing the Atlantic, only the most intrepid stick their oars in where others fear to paddle.

For Richard Hoyland, amply blessed with the right stuff, the call of the running tide proved irresistible. So, teaming-up with fellow mariner Steve Coe, he set out from the Canaries last January and rowed 3,000 miles to Antigua.

The pair were competitors in the Woodvale Challenge Rowing Race, a bi-annual charity event that attracts a field of around 30 people who endure high waves, extreme fatigue, sharks and squalls as they battle against the Atlantic in a quest to be the first to drop anchor in the Caribbean.

Fittingly, Richard and Steve's boat was called 'No Fear', and it carried them safely across the ocean in 76 days, placing the pair in 10th position and helping to raise over £20,000 for the British Heart Foundation and the Princess Anne Hospice.

Richard lost more than two stones on the crossing and recalls a voyage of highs and lows. "There were some pretty desolate times, particularly when we were unable to row because of the weather. But there were also moments of pure wonder, not least when the stars were reflected perfectly in the water and we felt as if we were enveloped by a galaxy of diamonds."

Would he do it again? Perhaps not the Atlantic but he admits that he still has water on the brain and wanderlust in his heart. "I'm thinking of swimming the Channel," he says, irrepressibly. "But it will be a while before I can stomach another moving horizon and the taste of salt."

So, for the moment, having beaten the Atlantic by boat and boosted the coffers of two charities, Richard Hoyland is simply content to be home and dry.

CREATIVEWORDS

Client: Arts magazine

Project: Article exploring creativity

Beautiful minds

With the Young Genius season in full swing at the Barbican, we explore the mysteries of human intelligence

Some people are fortunate enough to be born brilliant. Others, less genetically blessed, achieve brilliance through commitment to their art or craft – but no one has brilliance thrust upon them. Unlike greatness, you don't acquire exceptional brainpower by accident, circumstance or the will of others; no, genius springs from within.

If that much is true, and geniuses are either bred or self-made, has anyone been smart enough to discover the formula? What makes a Shakespeare or an Einstein, a Newton or a Leonardo da Vinci? One thing's sure: the genius debate has engaged the finest minds from science and medicine as well as psychology and the arts. But despite a mountain of monographs and a patchwork of interesting theories, are we any the wiser?

Consider Einstein. As the benchmark for brilliance, he's been studied from every angle, comprehensively anatomised, variously catalogued and indexed, and unsparingly deconstructed and reconstructed. In short, his mind has been painstakingly probed beneath a microscope – quite literally in fact. Not only did Einstein give us his General Theory of Relativity, he also left us his brain…tastefully pickled in a jam jar. After unlocking the secrets of the universe and departing to discover the ultimate truth, poor Albert was set upon by scalpel- wielding scientists who hoped his brain would surrender its unique code and reveal the measure of the man.

Disappointingly, it didn't. Although some claimed that Einstein had an unfair share of grey matter and a few interesting bumps and grooves, others said that his brain was more flyweight than heavyweight. Einstein, it seems, had a smaller light bulb than average, although no one disputed its exceptional wattage.

So, why did Einstein shine so brightly? Discounting brain size, perhaps supreme intelligence owes more to brain composition and genetics. Indeed, the word genius shares the same Latin root as gene, underwriting the 'born brilliant' argument. If genius is in our DNA, our genetic code, the truly gifted must have very unusual mind maps. 'Differently wired' is a description favoured by those who see genius as a kind of divine madness.

Consider idiot savants, individuals who are both outrageously talented and deeply flawed; they achieve outstanding feats in very narrow fields, such as maths, music or painting, while also being spectacularly challenged by everyday life. Compose music that makes the soul soar? No problem. Write words that thrill and inspire? A breeze. Calculate mind-numbing square roots in a nano second? Elementary. Ah, but tie a shoelace...now that's a different matter.

If genius has a price, there's a name for it. Many now believe that Asperger's Syndrome, a type of autism scarcely acknowledged until the 1990s, is the flipside of brilliance. Some suggest that Shakespeare, as well as other luminaries through the ages, suffered from the condition. And suffer is right, because with the beauty comes the pain.

Take Van Gough as an example. A genius, no question, albeit shamefully unrecognised in his own lifetime. But well adjusted and happily grounded? Hardly. In his case, one or two wires were certainly crossed as well as arranged differently. Often, it seems, if you want to outshine lesser mortals, you must also sizzle and spark, and occasionally explode.

Whether we're talking idiot savants, tortured geniuses, or the many hues of autism, there's something to be said for over-generous right-brain development. Studies have pointed to unusual growth of the right hemisphere (maybe compensating for damage to the left hemisphere) as one of the keys to genius. If bumps and grooves make brainpower, perhaps the story of Einstein's genius is indeed written inside a jam jar.

So much for unnatural inheritance. Genetic difference might explain much that's beyond the bounds of normal ability, but is it sufficient explanation for everything that bears the name genius? Edison, no under-achiever himself, famously contested that genius is really one percent inspiration and 99% perspiration. Hard work can get you so far, and it's certainly a foundation for success, but graft is hardly the same as genius.

Back to Einstein. Would he have been the man he was simply by staring at the stars long enough and filling his days with deep, cosmic thoughts? Sure, he was dedicated to his art – those equations didn't write themselves – but such commitment would have made little stir without the application of a superior intelligence. If you push the 'perspiration' argument to its logical conclusion, you are left with the quaint theory that, given an infinite amount of time and a reliable typewriter, a monkey would eventually deliver the complete works of Shakespeare.

No, you don't become a genius by dogged persistence, whatever the field. Vigour is no substitute for rigour. Ally one with the other, however, and you have a winning combination. And perhaps that's the point: true genius is the result of brains and determination.

There's no better illustration of this than literature. Good writers are often avid readers and careful observers of the world around them. Great writers, genius writers, may have a genetic advantage, but you can be sure they also absorb, learn and apply information in a way that others can never match. In other words, they cultivate an innate skill with total passion and focus. Theirs is a magnificent obsession, a creative rage that fires the genius.

In some ways this is a circular argument, because one is a condition of the other. The person who is different from birth, whose mind is both beautiful yet flawed, will be genetically driven towards the obsession that moulds raw genius and gives it its strength. Edison, although he claimed too much for the power of sweat, may have had a point after all.

Genius knows no boundaries of race, creed, colour or age. It may appear in the very young, as with the artists celebrated in the Young Genius season, or it may emerge later in life. In fact, many geniuses show very little early promise.

We all recognise genius when we see it, but we are nowhere near understanding it. And perhaps that's fitting, since what makes genius so compelling is that it's unfathomable. As Schopenhauer put it: "talent hits a target no else can reach; genius hits a target no one else can see."

CREATIVEWORDS

Client: Global banking network

Project: Personality profile

Alex through the looking glass

SWIFT's security chief emerges from the shadows and discusses counter-intelligence and diplomatic protection

Alexandro Legein is a man with a resolute mission. Like Inspector Clouseau, he stays one jump ahead of the opposition and expects the unexpected. From sunrise to sundown, his security antennae are primed for danger and alert to concealed threats. However, unlike Peter Seller's hapless detective, this Belgian sleuth knows what he's doing and has the credentials and case histories to prove it.

Enter Alex's office and you'll have no doubt about his pedigree. Between the awards and citations are photos of statesmen, their names writ large in world affairs, who stare imperiously from the walls: George Bush, Dick Cheney, Javier Perez de Cuellar, King Juan Carlos of Spain, Manfred Worner – just some of the movers and shakers from recent years. Look closer and invariably you'll see, Zelig-like in the background, a watchful figure in a standard-issue MI5 raincoat. Yes, Alex has rubbed shoulders with the best.

So, how do you become an international security expert and confidant of the good and the great? Well, like those who aspire to space travel or deep-sea diving, this is a métier where no amount of paper qualifications can replace solid experience.

And experience is something Alex has in abundance. As a journalist in the mid-1970s, he developed the investigative instincts and eye for detail that are now the tools of his trade. Swapping his pen and note pad for a gun and warrant card, he joined the Belgian Maritime Police in 1978 and specialised in narcotics and fraud investigation.

In 1985, he moved to the Directorate of Public Security where, as an Inspector in the Bureau of State Security, he was introduced to the demi-monde of counter-intelligence, counter-terrorism, and diplomatic protection. Next came three years at Federal Express and two at DHL, where he led operations in Europe and Africa.

At Federal Express, the first service company to win the Malcolm Balbridge Award for Quality, Alex became a firm believer in the standards and practice of Total Quality Management. Finally, his tortuous road as a crime fighter led to SWIFT, where he has been chief of security for just over a year.

Looking back, Alex recalls his time in national security with special fondness: "It was a fascinating era and my role in monitoring Soviet bloc activity and protecting heads of state and diplomats taught me a great deal about different ideologies and cultures."

He remembers the gradual thaw in East-West relations and, in particular, a unique moment that signalled the end of the Cold War. "I was at NATO headquarters in 1988, assigned to protective duties during a visit by Edvard Shevardnadze, Gorbachev's minister of foreign affairs. Just think of that – a Soviet statesman walking into the very heart of the West's defence!"

But what followed was even more astonishing. As Shevardnadze entered the holy of holies, NATO staff greeted him with a ripple of applause that grew into a thunderous roar. He responded in kind, waving and cheering, and for several minutes the Russian delegation and its hosts were lost in mutual admiration. "It was a defining and unforgettable moment," Alex recalls.

Another moving experience – but in an entirely different sense – occured when he was assigned to protect Dick Cheney, US Secretary of Defence in Bush's administration. "Mr Cheney told us he was going for a walk," recounts Alex, "so I and my fellow bodyguards had to accompany him every step of the way. What we didn't realise was that when he said 'walk', he didn't mean a casual stroll around the corner; no, what he had in mind was speed-walking – the Olympic version."

What followed was a cross between Keystone Cops and a Benny Hill pursuit. Alex and contingent, wearing dark glasses and perspiring heavily in their neatly pressed suits, guns loaded and ready, tried desperately to keep up with the US secretary of defence as he hip-swivelled around Tevuren Park, a pied piper setting a punishing pace. All that was missing was the comedy music.

Although there were many humorous moments during his time with the Bureau of State Security, Alex is quick to point out that it was an invaluable training ground. This, and his time at Federal Express and DHL, helped to develop what he calls his "forensic eye", and gave him a thorough understanding of international security issues. "The Cold War may be over," he says, "but another kind of warfare continues unabated. It's a war of competitive advantage, in which industrial espionage and the quest for business intelligence reign. Aggressive marketing and hostile takeovers are just some of the weapons."

Today, more than ever, SWIFT must watch its back. Competition is everywhere, and no one can afford to be complacent. "That's why," says Alex, "we must always think ahead and be prepared. My guiding principle is the five 'Ps': Proper Preparation Prevents Poor Performance." And when it comes to preparation, Alex knows where the immediate threats lie.

"Too often we ignore the basics," he says. "The physical security of assets such as buildings, computers and documents is essential. Just because we live in an age of technical wizardry, when everyone seems preoccupied with electronic fraud, we shouldn't forget good old- fashioned opportunism. For example, the intruder who walks through the supposedly secure entrance into a supposedly secure office, and then does as he pleases. Attention to minor details can make a big contribution to overall security."

Alex's mission, then, is to ensure we observe basic security measures. That means remembering the simple things, such as wearing ID badges and being careful with passwords. "My goal is to create a culture of care," says Alex. "Security must never be an afterthought – because then it may be too late and the damage will have been done." And what of the future? What threats does Alex foresee for SWIFT? "There are very few countries where we don't operate, and our international role is growing stronger every year. This, of course, increases our vulnerability. Because we lie at the heart of the financial community, we can't afford to be complacent. We must constantly assess security risks and never take any threat lightly."

Finally, on a domestic note, Alex would like to clear up a minor security misunderstanding. You may have been surprised to see a line in SWIFT's new internal directory that encourages you to "refer" any potentially explosive device to your manager.

"Naturally," says Alex reassuringly, "that doesn't mean you should hand your manager a bomb." Somehow, given his shrewd understanding of cause and effect, Inspector Clouseau would surely agree.

CREATIVEWORDS

Client: Engineering magazine

Project: Personality profile

The Mulberry man

The D-Day landings would have been impossible without Sir Bruce White's ingenious Mulberry Harbours. Sean Martin reviews one of the greatest feats of marine engineering

Seventy years ago, cloaked in secrecy, preparations were nearing completion for the largest and most ambitious marine landing in history. June 6, 1944, codenamed Day-Day, was the date planned for the launch of Operation Overlord, the Allied invasion of France that would lead to the liberation of Europe and the defeat of Hitler.

The logistical challenge facing Allied High Command was daunting. Without access to a continental port, how would it be possible to land hundreds of thousands of troops and vast quantities of munitions on the heavily fortified Normandy beaches? The solution, deceptively simple yet critical to the success of the invasion, was a triumph of necessity over adversity.

If no harbours existed for the men and materials of the invasion force, they would have to be created. As Winston Churchill said in a forthright memorandum to Lord Mountbatten: "We need piers that must float up and down with the tide. The anchor problem must be mastered. Let me have the solution worked out. Don't argue the matter. The difficulties will argue for themselves."

That famous directive was brought to the attention of Sir Bruce White, director of ports and inland waterway transport at the War Office, who was invited by the prime minister to use his specialist engineering knowledge to develop a solution. The result, codenamed Mulberry, drew heavily on Sir Bruce White's personal experience in the UK and overseas.

In 1941, Sir Bruce White headed a branch of the War Office called Transportation 5, which handled the construction of special port facilities in Scotland. The experience he gained in developing these facilities proved invaluable when planning and designing the Mulberry Harbours.

Although the project was much discussed, it was not until after the Quebec Conference in 1943, when the combined chiefs of staff approved the construction of Mulberry, that design began. With the invasion planned for June of the following year, only eight months remained to complete an engineering project of unprecedented scale and technical complexity.

To meet the requirements of Churchill's memorandum, Sir Bruce White drew inspiration from an event in Chile in 1924. While he was working in the harbour of Valparaiso, a storm destroyed all the ships except for a dredger. The craft, built in Scotland, was fitted with three 'spuds' or sea legs, which helped it to survive bad weather by rising above the turbulence of the waves. Applied to the harbours, the idea not only met Churchill's stipulation that the structure should "float up and down with the tide" but also answered the "anchor problem", since the spuds would be secured to the seabed.

Total secrecy and meticulous organisation were imperative. Aided by a deputy, brigadier Rolfe, Sir Bruce White directed an organisation of more than 25,000 people, who were deployed to build Mulberry components at locations throughout Britain. Few had any idea of the purpose behind their work.

An area on the Solway Firth was chosen as the testing site, because the rise and fall of the tide (about 24 feet) was similar to the Normandy coast. Experiments were carried out on the concrete caissons, including towing, manoeuvring and even sinking the units, while compressed air breakwaters were among some of the options investigated. After rigorous tests, the concrete caissons were deemed suitable and 150 were produced.

Using the model of the Valparaiso dredger, 23 pierheads were built, but with four rather than three spuds. The design allowed the pierheads to ride up and down with the tide, the spuds automatically adjusting to the water level. Anti-aircraft guns were fitted as well as cabins for the personnel. The next problem was to link the pierheads to the shore.

This was achieved with flexible roadways, which were strong enough to carry the largest tanks. Floating on pontoons, the roadways were made of steel decks 10 feet wide, and were equipped with a telescoping unit that allowed them to accommodate tidal movement. ingeniously designed, the roadways were largely the work of AH Beckett, a bridge expert who, along with brigadier Rolfe, would join Sir Bruce White's firm after the war.

When completed, the Mulberry components were towed to assembly points on the south coast, ready to sail for occupied France. Viewing this unprecedented armada on the eve of D-Day, Sir Bruce White testified to history in the making: "I must confess to a tightening of the throat when, on rounding Selsey Bill in the launch from Portsmouth, I saw in the evening haze what appeared to be a vast city set in the sea. Here, assembled at random, were 80 Phoenix units and sundry equipment, including the pierheads whose spuds gave the impression of tall chimneys."

He was later to see all the equipment safely installed at Arromanche, the British beachhead, in preparation for opening the Second Front. By the end of 1944, 220,000 soldiers had landed in Normandy together with 39,000 vehicles. It was an astonishing achievement, prompting General Eisenhower to remark that: "Mulberry exceeded our best hopes".

Knighted for his contribution to the war effort, Sir Bruce White had the satisfaction of knowing that the invasion of Europe, inconceivable without the Mulberry Harbours, was a tribute to British engineering at its most resourceful and inventive.